MASTER

Operating Instructions

STEREO CASSETTE TAPE DECK RECEIVER

RX-310

STEREO TURNTABLE

PL-210Z/PL-310Z

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE
[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

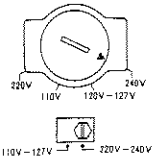
TWO VOLTAGE SELECTOR SWITCHES

Only multi-voltage models are provided with these switches. Australian model is not provided with these switches.
Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with 110 V setting in Saudi Arabia.

The line voltage selector switches are on the rear panel. Before your model is shipped from the factory, these switches are set to the power requirements of the destination. Check they are set properly before plugging the power cord into the household wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switches as follows.

1. Use a medium-size screwdriver.
2. First, insert a screwdriver into the groove of the voltage selector at the top, and adjust so that the tip of the groove points to the voltage value of your area.
3. Next, insert a screwdriver into the groove of the voltage selector at the bottom and adjust until the voltage is the same as at the top.

Both switches must be in the same switch setting.



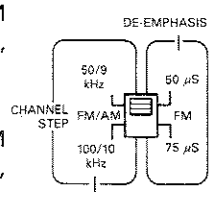
CHANNEL STEP/FM DE-EMPHASIS SWITCH

The unit has been factory preset to the channel allocation and de-emphasis value for the area in which it is to be sold. If these value are set incorrectly, the frequency display may stop at the wrong frequency, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality. For this reason, be sure to confirm that the values are set correctly before first using the unit.

[100 kHz/10 kHz/75 μs] position:
Set to this position for areas with FM reception step of 100 kHz, AM 10 kHz, and de-emphasis 75 μs.

[50 KHz/9 kHz/50 μs] position:
Set to this position, for areas with FM reception step of 50 kHz, AM 9 kHz, and de-emphasis of 50 μs.

When unsure about the channel allocation and de-emphasis values for your area, consult your dealer for correct information.



CONTENTS

FEATURES 3
CHECKING ACCESSORY ITEMS 3
BEFORE OPERATION 3
ANTENNA CONNECTIONS 4
CONNECTIONS 5
PANEL FACILITIES 6
REMOTE CONTROL UNIT FACILITIES 9
TURNTABLE FACILITIES 10
HOW TO HANDLE CASSETTE TAPES 11
GRAPHIC EQUALIZER CONTROLS 12
PRELIMINARY OPERATIONS 12
BASIC OPERATIONS 12
TAPE COPYING 15
RECORDING AND PLAYBACK USING OPTIONAL AUDIO TIMER 16
MIC MIXING 16
MAINTENANCE 17
TROUBLESHOOTING 18
SPECIFICATIONS 19

PIONEER®
The future of sound and vision.

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

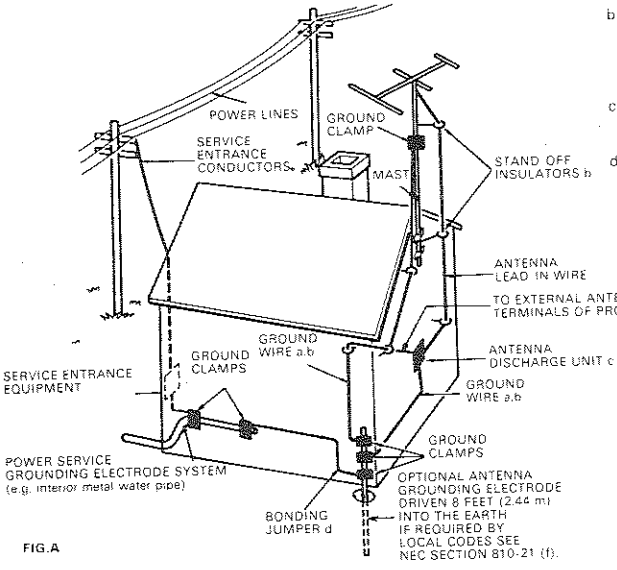

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND OFF INSULATORS b
ANTENNA LEAD IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
GROUND CLAMPS
ANTENNA DISCHARGE UNIT c
SERVICE ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f).
BONDING JUMPER d

FIG.A

a) Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copperclad steel, bronze wire, or larger as ground wire.

b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

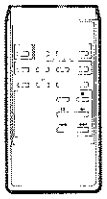
c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).

FEATURES

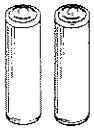
- High power output
- 5-band graphic equalizer
- System remote control
- Stereo double cassette tape deck
- Synchronized recording start
- High-speed copy
- Relay play
- Auto tape selector
- Auto recording level
- Quartz PLL synthesizer FM/AM tuner
- Up to 24 stations random pre-set

CHECKING ACCESSORY ITEMS



- Remote control unit

- FM T-type antenna

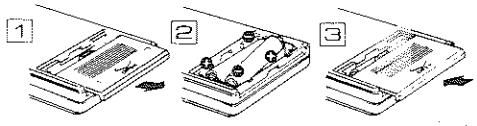


- Size "AAA" (IEC R03) 1.5V (UM-4) dry cell batteries

- AM loop antenna

BEFORE OPERATION

REMOTE CONTROL UNIT



[1] Remove the cover of the battery compartment on the reverse side of the remote control unit.
[2] Take out the two size "AAA" [IEC R03 (UM-4)] dry cell batteries supplied and load them into the battery compartment, taking care to follow the markings on the compartment.
[3] Replace the cover of the battery compartment.

Cautions for handling dry cell batteries.

Misusing dry cell batteries can result in electrolyte leakage or explosions. Bear in mind the following points for getting the most out of your batteries.

- When loading the batteries into the battery compartment, make sure the plus ⊕ and minus ⊖ polarities correspond to the markings on the compartment.
- Even though they may be the same shape, batteries come with different voltage ratings. Do not mix or use different types of batteries together. Use only the same kind of batteries.
- Do not mix up new batteries and used batteries but replace all the batteries at the same time.
- Do not heat up, disassemble or short-circuit batteries or throw them into a fire.
- Some batteries are rechargeable while others are not. Observe the cautionary notes on the batteries and use them properly.

TURNTABLE PL-210Z/PL-310Z INITIAL TURNTABLE SET-UP

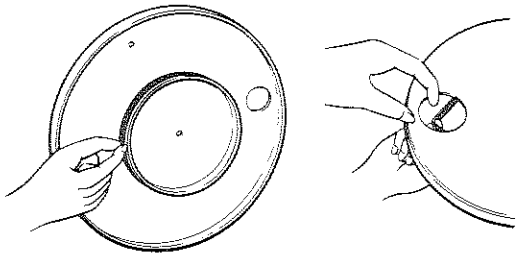
1. Check the parts.

EP adaptor Platter mat Platter

2. Pull dust cover up and off of rear hinges. (PL-210Z PL-310Z)

3. Turn over platter.

4. Pinch belt on inner rim between thumb and forefinger.

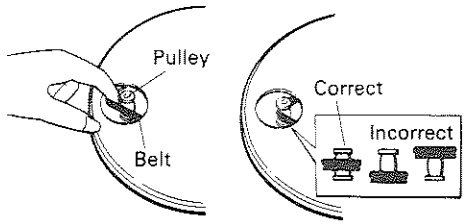


5. Slip belt over thumb and pull out, inserting thumb in hole.

6. Insert forefinger from top of platter and transfer belt to forefinger.

7. Lower platter onto spindle.

8. Release belt onto pulley.



9. Place the platter mat on the platter. (with "PIONEER" side up)

10. Remove the vinyl band holding the tonearm.

11. Remove the tonearm from the arm rest.

12. Remove the stylus cover.

ANTENNA CONNECTIONS

RADIO RECEPTION IS NOT POSSIBLE UNLESS THE ANTENNA IS PROPERLY CONNECTED.

The strength of a broadcast signal varies from one area to another. Signal propagation is especially poor in metropolitan areas, where there are many tall building, and in mountainous areas. Proper antenna installation is vital to good reception.

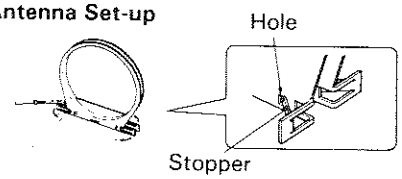
AM ANTENNA

The AM loop antenna supplied with the cassette tape deck receiver should be connected to the AM antenna terminals. The antenna should be placed at a distance from the cassette tape deck receiver, and should not be allowed to touch metallic objects. Avoid placing it near CD players, personal computers, television sets, and other devices generating radio frequencies.

Setting up the AM antenna

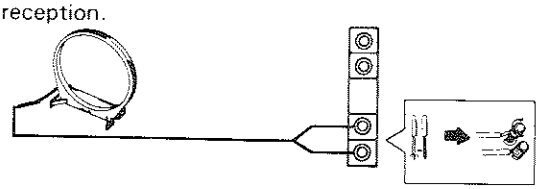
- Fold out the supports on the bottom of the antenna. Insert the stopper in the hole in the antenna to lock them in place.
- Place the antenna on a level surface and rotate it to locate the orientation that yields the best reception.

AM Loop Antenna Set-up



AM Loop Antenna Connection

The accessory AM loop antenna must be connected to ensure proper reception.



External AM antenna

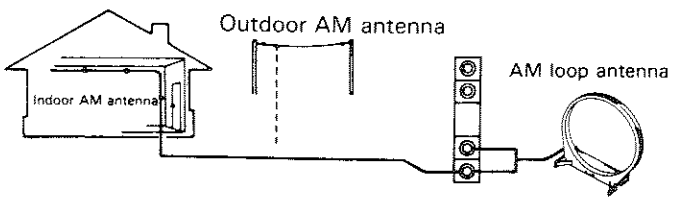
Indoor AM antenna

Provide a vinyl-coated wire (5 to 6 meters long). Secure one end to the AM terminal and the other end to a wall or other high location.

Outdoor AM antenna

If reception is still poor even when a lead antenna has been stretched out indoors, stretch out a vinyl-coated wire and secure it outdoors.

Connecting the external AM antenna

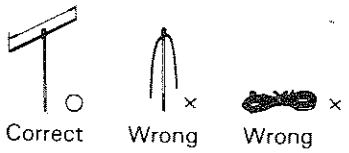


NOTE:
Do not detach the AM loop antenna when using the external AM antenna.

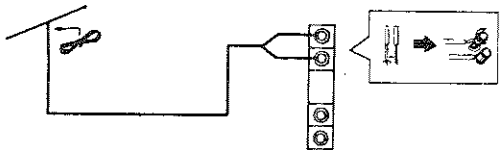
FM ANTENNA

FM T-type antenna attachment

Connect the accessory FM T-type antenna to the FM terminals. Stretch the antenna out to its full length, and affix it to a wall, etc.
Stretch out both ends.



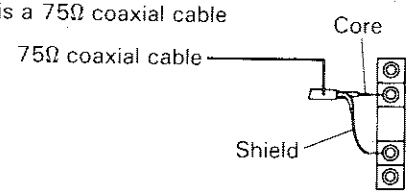
The accessory FM T-type antenna must be connected to ensure proper reception.



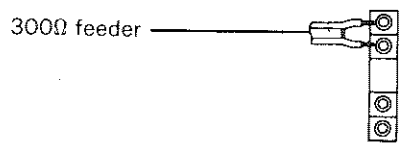
External FM antenna installation

Use an external antenna when the signals from the station are weak and cannot be picked up by the accessory FM T-type antenna, or when the sound heard is accompanied by large amounts of noise. There are two ways of connecting the external FM antenna to the ANTENNA terminals; with 300Ω feeder wire or with a 75Ω coaxial cable.
It is recommended that you use the 75Ω coaxial cable, so that the effects of extraneous noise are reduced to a minimum.

When the connecting cable is a 75Ω coaxial cable



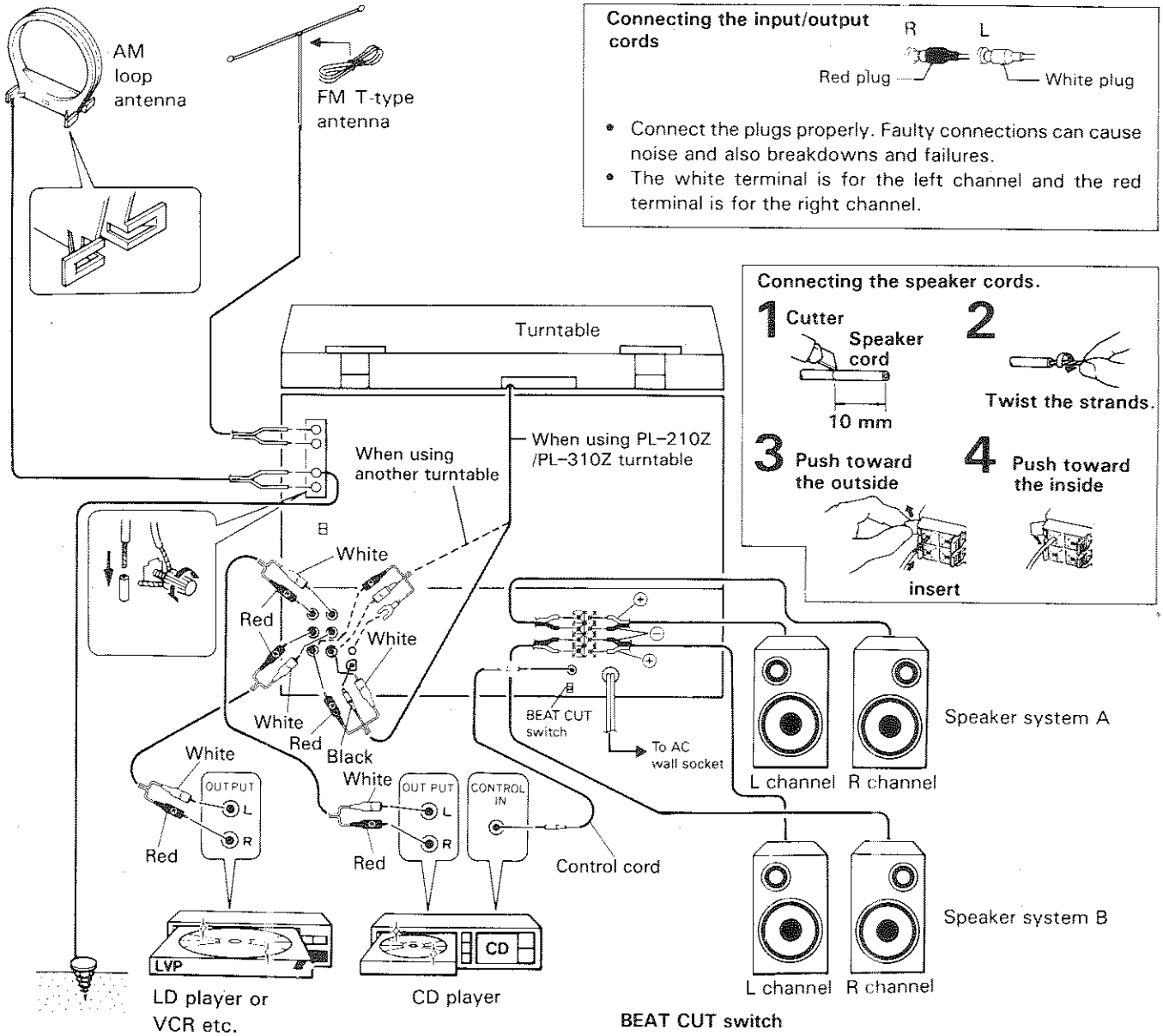
When the connecting cable is a 300Ω feeder wire



CONNECTIONS

Proceed as follows with the set-up and connections

1. Connect the FM antenna and the AM antenna to the ANTENNA terminals of the cassette tape deck receiver. (See page 4) (Use an antenna ground as necessary. See page 6.)
2. Connect the turntable cords to the cassette tape deck receiver TURNTABLE jacks (and GND terminal). If any other stereo component is to be used, connect in the same way to the input jacks of the cassette tape deck receiver.
3. Connect the speaker cords to the SPEAKERS terminals.
4. Finally, connect the power cord to the AC wall socket.



Connecting the input/output cords

- Connect the plugs properly. Faulty connections can cause noise and also breakdowns and failures.
- The white terminal is for the left channel and the red terminal is for the right channel.

Connecting the speaker cords.

BEAT CUT switch

Set this switch to minimize beat when beat is being recorded during recordings of AM broadcasts or during tape copying while an AM broadcast is being received.

Antenna ground

Although grounding is not necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. Grounding is recommended as well to help reduce noise and humming.

NOTE:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

NOTE ABOUT SPEAKER CONNECTIONS

- Speaker systems used should have an impedance of between 8Ω and 16Ω.
- Be sure that connections are secure. Check to make sure that wires do not protrude from their terminals.
- Do not allow the speaker cords to become shorted. Damage may result to your equipment.
- Do not attempt to simultaneously connect two sets of speakers to a single side (A or B). When using two sets of speakers, connect one set to side A and one set to side B.

AC OUTLET SWITCHED 100W MAX
(Multi-voltage model only)

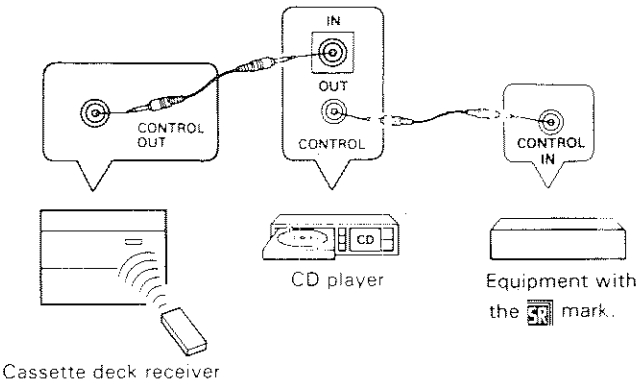
Power supplied through this outlet is turned on and off by this equipment's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET, in order to avoid overheating or fire risk.
This can cause this equipment to malfuntion.

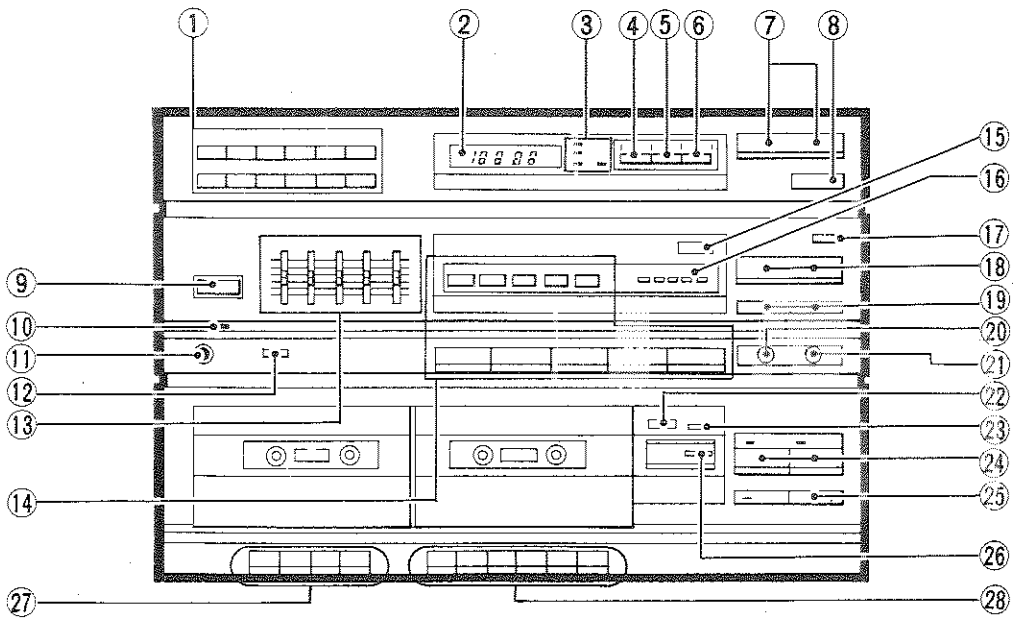
To control a unit other than this receiver using the remote control unit

① In the case of PIONEER equipment marked SR which is provided with a remote sensor, operate the equipment by aiming the remote control unit at the remote sensor on the equipment.

② For equipment marked SR, without a remote sensor, operation of the equipment by facing the remote control unit towards the remote sensor of the cassette deck receiver possible with connection from the CONTROL OUT jack to the CONTROL IN jack. Use a commercially available cable with mini-plugs for the connection.



PANEL FACILITIES



TUNER SECTION

①STATION CALL switches

These are used to recall preset broadcasting stations and to preset the station.

②FREQUENCY (STATION NUMBER) DISPLAY
③INDICATORS

[TUNED]
This lights to indicate that a station has been optimally tuned in.
[STEREO]
This lights during FM stereo reception.
[FM MONO]
Lights when the FM MONO switch is pressed to select monaural FM reception.
[AUTO TUNING]
Lights when the auto tuning mode is selected during FM/AM reception.

④MEMORY switch

This switch is used to memorize stations. When the switch is pressed, the FREQUENCY indicator will flash. To memorize the frequency of any station, press the STATION CALL switch while the frequency indicator is flashing.

⑤FM MONO switch

Normally, the FM MONO indicator remains off. However, it may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press the switch to set the reception to the monaural mode (FM MONO indicator lights) and tune in the station. The program of an FM stereo broadcast will be heard in mono. This switch will not function for AM reception.

⑥AUTO/MANUAL switch

Use to select either the AUTO mode or MANUAL mode for FM/AM reception.

⑦TUNING switch

The function of this switch differs according to whether AUTO tuning or MANUAL tuning is selected.

[AUTO tuning mode]
When this mode is selected, AUTO TUNING indicator lights (press AUTO/MANUAL switch if the indication is not lighting). When the "+" side is pressed, the frequencies are scanned in ascending order; when the "−" side is pressed, they are scanned in descending order. Scanning stops as soon as a station has automatically been tuned in.
Auto scanning is terminated when either TUNING, AUTO/MANUAL, BAND or MEMORY swich is pressed.

[MANUAL tuning mode]
When this mode is selected, AUTO TUNING indicator turns off (press AUTO/MANUAL switch if the indicator is lighting). When the "+" side is pressed once, the frequency is raised one step. When the "−" side is pressed once, the frequency is lowered one step.
When the "+" side is kept pressed, the frequency increases and when the "−" side is kept pressed, it decreases.

⑧BAND selector switch (FM/AM)

This is used to select the band of the desired station. The bands change alternately each time the switch is pressed.

FM reception → AM reception →

AMPLIFIER SECTION

⑨POWER (STANDBY/ON) switch

When this switch is set to the ON position, the STAND-BY/SLEEP indicator goes out and power is supplied to the main circuits of the cassette deck receiver.
Disconnect the power cord from the power outlet when you do not plan to use the cassette deck receiver for a long period of time.

The cassette deck receiver has a backup function, so it will return to the original status when the power cord is unplugged and soon again plugged into the power outlet.

⑩STANDBY/SLEEP indicator

This indicator lights in stand-by status or when the SLEEP function is operating when the power cord is connected to a power outlet.
When the SLEEP key on the remote control unit is pressed, the sleep function is activated for approximately 60 minutes, then enters the standby mode. (The STANDBY/SLEEP indicator flashes faster as the end of the remaining time nears.)

⑪PHONES jack

This is a "standard plug-type jack" for headphones.

NOTE:
Sound is not heard from the speakers when headphones are in use.

⑫SPEAKERS switch (■ A, ▬ A+B)

This is used to select the speaker through which you wish to listen.

- ■ A : When the speakers connected to A terminals are in use.
- ▬ A+B : When the speakers connected to A and B terminals are in use.
  (There is no sound if A + B is selected when speakers are connected only to the A terminals.)

Be sure to use A terminals when you use one pair of speakers only. No sound will be heard through the speakers when only one pair of speakers are connected to B terminals.

⑬GRAPHIC EQUALIZER controls

The equalizer is divided into five frequency ranges (100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz) to adjust music to the individual taste of the listener.

NOTE:
Effective only for audio playback. Does not work for recording and copying operations.

⑭ FUNCTION switches/indicators

The indicators light for the specified functions.

[VIDEO/AUX]
Press when listening to a stereo component connected to the VIDEO/AUX jacks.
[TAPE]
Press when listening to a cassette tape.
[TUNER]
Press when listening to a radio broadcast.
[PHONO]
Press when playing records on a turntable connected to the PHONO jacks.
[CD]
Press when listening to a CD player connected to the CD jacks.

⑮ REMOTE SENSOR window

⑯ VOLUME/BALANCE indicators

The indicators show volume level. When either of BALANCE switches is pressed, the indicators show BALANCE between left and right channels.
The indicators flash during muting.

⑰ MUTING switch

Pressing this switch alternately interrupts and returns the sound. VOLUME/BALANCE indicators flash during muting.

⑱ VOLUME switch

This switch is pressed to adjust the volume.
+: Increases volume.
−: Decreases volume.

⑲ BALANCE switches

Use to adjust the balance between the sounds from the left and right speakers.
LEFT: Press to decrease the sound on the right side.
RIGHT: Press to decrease the sound on the left side.
CENTER: The display returns to CENTER when both LEFT and RIGHT are pressed simultaneously.

⑳ MIC jack

Used to connect microphones equipped with standard plugs.

㉑ MIXING LEVEL

Adjusts the volume of the microphone.
Increasing the microphone volume reduces the source volume.

CASSETTE TAPE DECK SECTION

- The cassette deck receiver is provided with an automatic tape selector function.
  Deck I ... NORMAL/CrO_2, METAL
  Deck II... NORMAL/CrO_2

㉒ DECK II TAPE COUNTER

㉓ DECK II COUNTER RESET button

㉔ COPY MODE switches/indicators

These switches and indicators are used to select the copy mode.
The SYNCHRO indicator lights:
Normal-speed copying (Permits you to listen to playback normally.)
Both the SYNCHRO and HIGH SPEED indicators light:
High-speed copying (double-speed, halftime copying)

㉕ DOLBY NR switch/indicator

Press to activate noise reduction system. Use to play back tapes recorded using Dolby B NR noise reduction.

- Tapes recorded using Dolby B NR noise reduction should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby B NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

㉖ Recording indicator (REC)

Lights during recording. Flashes during tape copy standby mode or remote control pause.

㉗ DECK I MODE switches

■/⏏ (STOP/EJECT).. Stops tape travel. Ejects cassette if pressed when tape is stopped.
▶ (PLAY)..... Playback.
▶▶ (FF)..... Fast forward
◀◀ (REW)..... Rewind

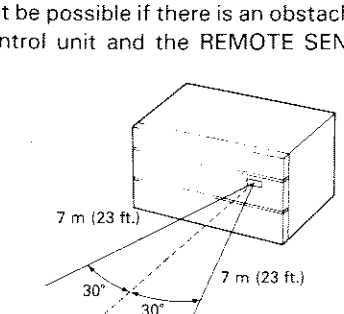
㉘ DECK II MODE switches

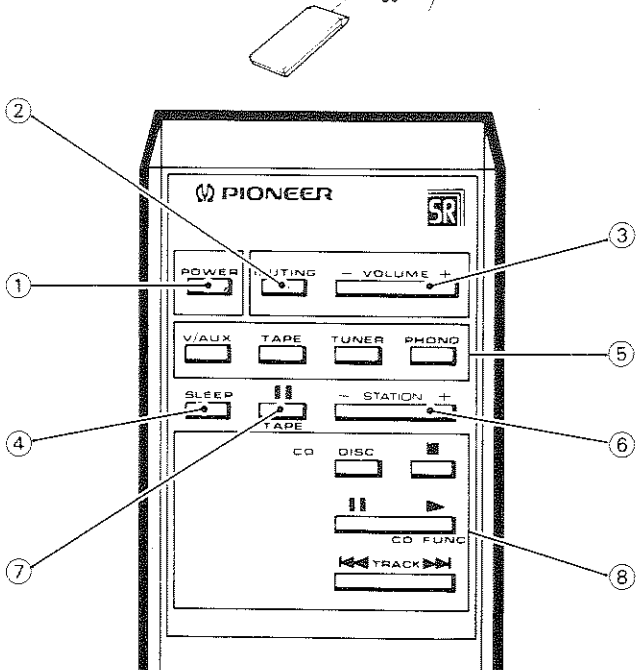
❚❚ (PAUSE)..... Temporarily stops tape travel. Cancels pause mode when pressed again.
■/⏏ (STOP/EJECT).... Stops tape travel. Ejects cassette if pressed when tape is stopped.
▶ (PLAY)..... Playback
▶▶ (FF)..... Fast forward
◀◀ (REW)..... Rewind
● (REC)..... Record

REMOTE CONTROL UNIT FACILITIES

Range of remote control

When the remote control unit is pointed at the REMOTE SENSOR window on the deck receiver and any of its keys is pressed, the cassette deck receiver and other components can be operated by remote control.
Distance: Within a range of about 7 meters from the REMOTE SENSOR window
Angle: Within approx. 30 degrees from the center of the REMOTE SENSOR window
Remote control will not be possible if there is an obstacle between the remote control unit and the REMOTE SENSOR window.





①POWER key

②MUTING key

③VOLUME (+:UP, −:DOWN) key

④SLEEP key

Pressing this key sets the sleep timer to approximately 60 minutes. The STANDBY/SLEEP indicator flashes while the sleep timer is operating. The SLEEP indicator flashes faster as the end of the remaining time nears.

⑤FUNCTION selector keys

⑥STATION key

+ (UP): Used to tune in the station numbers in ascending order.
− (DOWN): Used to tune in the station numbers in descending order.

⑦TAPE ▮▮ (PAUSE) key

Use to pause during tape playback or recording.
Press again to release the pause.
Refer to "Remote control pause" for details.

⑧CD keys

►(Play) ..... Function on the amplifier section is set to CD mode.
Begins CD playback.
▮▮(Pause)..... Press to temporarily pause playback.
■(Stop) ..... Press to stop playback.
DISC..... Disc numbers can be selected when used together with a Pioneer magazine type CD player.
►►|(Track search) ... When pressed once, play advances to the beginning of the next track; when pressed continuously, advances to further tracks.
|◄◄(Track search) ... When pressed once, play returns to the beginning of the currently playing track; when pressed continuously, returns to earlier tracks.

Remote Control Pause

(When remote control pause is possible)

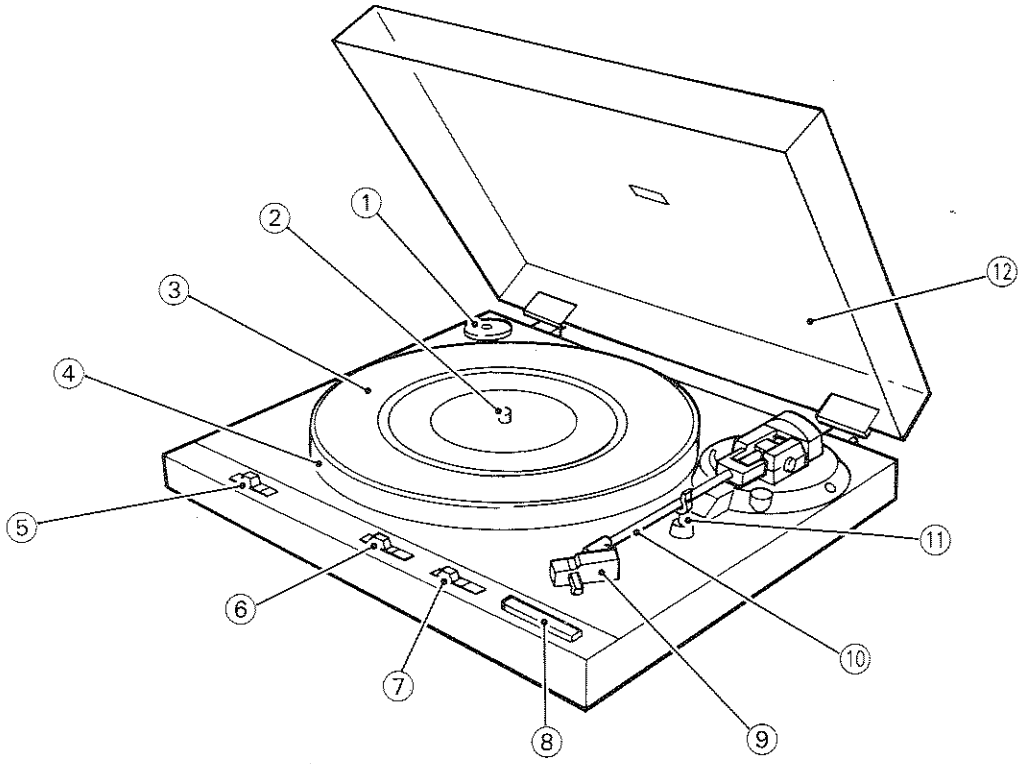
	Deck I PLAY	Deck II PLAY	Relay Play	Source REC.	SYNCHRO REC.
Deck I	YES	–	YES*	–**	YES***
Deck II	–	YES	YES*	YES	YES***

*When pause is applied while the deck is playing back.
**Use remote control pause only for Deck II during tape dubbing. The Deck II pause will not be released even if Deck I is played back in this status.
***Both Deck I and Deck II will pause.
Pressing the remote control PAUSE key again releases the pause.

NOTES:

- *Remote control pause is also released when the deck operating status is changed by using any of the main unit operating switches except for the Deck II PAUSE switch (except for item ** above). When pause is applied from the remote control, it is recommended that the pause also be released from the remote control.*
- *If a pause is applied while one deck is playing back, the pause will not be released even if the FF, REW, STOP/EJECT switches of the other deck are operated.*
  (Pressing the PLAY switch releases the pause and enters the relay playback mode.)

TURNTABLE FACILITIES (OPTIONAL)



NOTE:
Illustration shows PL-310Z.
PL-210Z is not equipped with disc size switch.

① EP adaptor
Place over the spindle to play 45-rpm singles.

② Platter spindle

③ Platter mat

④ Platter

⑤ SPEED switch
Set this switch in accordance with the speed of the record.
33: For 33-1/3 rpm records. 45: For 45 rpm records.

⑥ ARM ELEVATION switch
- Use the switch for manual play.
- Use the switch to suspend record play temporarily.
- Use the switch when changing the tracks during actual play.

[UP] : The tonearm rises (the stylus moves away from the record).
[DOWN] : The tonearm descends (the stylus is lowered onto the record).

⑦ SIZE switch (only PL-310Z)
Set this switch in accordance with the size of the record.
30: For 30 cm records. 17: For 17 cm records.

⑧ STOP switch (PL-210Z)
Press this switch when stopping play.

⑧ PLAY/STOP switch (only PL-310Z)
Press this switch when starting auto play or when stopping play.

NOTE:
Be sure to press the switch firmly when starting playback: if not pressed firmly, the platter may rotate without the tonearm moving.

⑨ Cartridge

⑩ Tonearm

⑪ Arm rest

⑫ Dust cover

HOW TO HANDLE CASSETTE TAPES

Note the following points before loading cassette tapes.

Check to see if tape is loose, or projecting outside the cassette shall.
If some of the tape is projecting outside the cassette shell or if it is loose, it may not enter between the capstan and pinch roller. This will prevent the tape from being supplied or damage the tape itself. In cases like these, insert a pencil into the reel hole and take up the slack. (Fig. A)
Some cassette tapes come with a plastic or thick paper stopper which prevents tape slack. Remove this stopper when loading the tape and replace it after having used the cassette.

What are the accidental erasure prevention tabs for?

A cassette is provided with these tabs so that important or otherwise valuable recordings will not be erased accidentally. When the tab (Fig. B) on the cassette shell is broken out with the tip of a screwdriver, it will not be possible to activate the recording function even by pressing the recording (REC) switch, so valuable recordings will not be erased in error.
To re-record on a cassette whose tabs have been broken out, simply stick a piece of doubled adhesive tape over the tab areas, as shown in Fig. C.

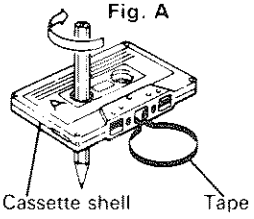
NOTE:
The accidental erasure prevention tabs are located at the top left on both sides A and B (1 or 2), so that material on each side can be prevented from being erased in error.

Tips on using cassette tapes

- Leader tape (which does not allow sound to be recorded over it) is provided at the beginning of a cassette tape. Start recording after allowing the tape to run for about 5 seconds so that the leader tape clears the recording head.
- Do not leave a cassette tape exposed to the environment. Store the cassette in its case so that dust and dirt do not adhere to the tape after use, and so that the tape is prevented from becoming slack. Choose a location which is not exposed to the effects of magnetism, dust, dirt and oil for storing the tapes.
- Because C-120 tapes are so thin, they easily jam in the pinch roller and capstan, and they are susceptible to other trouble such as irregular winding. Their use is not recommended with this unit.

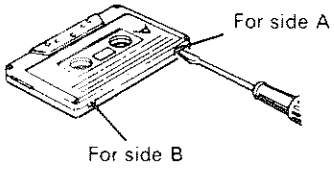
How to take up tape slack

Fig. A



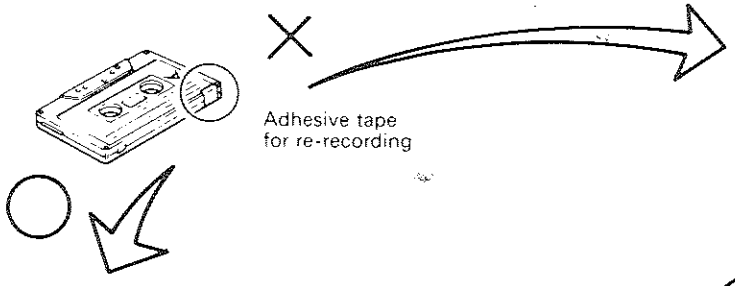
How to prevent already recorded tapes from being erased

Fig. B



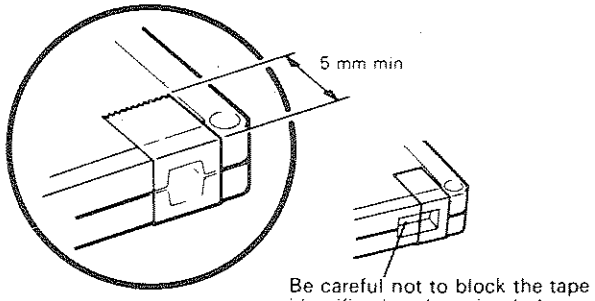
NOTE FOR RE-RECORDING ON A CASSETTE TAPE WHICH HAS A BROKEN TAB

Fig. C



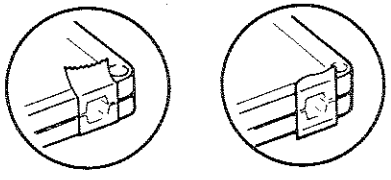
CORRECT METHOD OF APPLYING TAPE

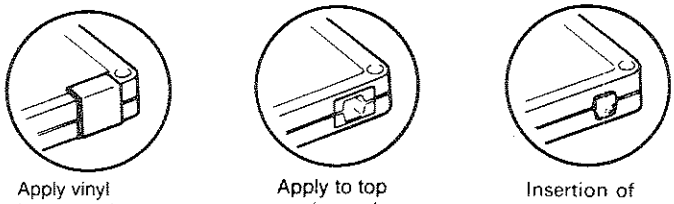
- Apply two layers of adhesive tape.
- Apply the tape taut so that it does not rise up.



INCORRECT METHOD OF APPLYING TAPE

THIS MAY RESULT IN AN ACCIDENT





After removing the adhesive tape, completely wipe away all traces of paste. Use only alcohol or benzine.

GRAPHIC EQUALIZER CONTROLS

The advantage of the GRAPHIC EQUALIZER over conventional tone controls is that with the five controls of the GRAPHIC EQUALIZER it is possible to control five different frequency band. With conventional tone controls a setting for a bass or treble boost or cut will also affect the lower or upper mid frequencies. The frequency bands controlled by the five slide controls have been chosen to yield the maximum possible control action within the audio spectrum.

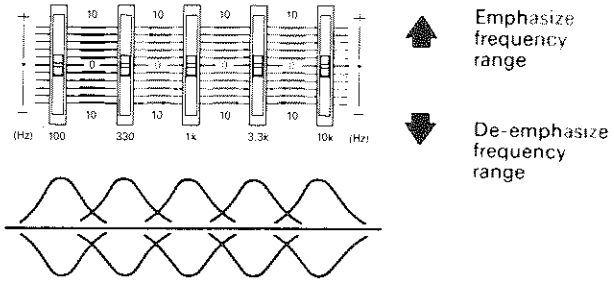
100 Hz: The 100 Hz control is very useful for enhancing low bass notes as in organ music.

330 Hz: The 330 Hz control will allow you to vary the upper bass frequencies.

1 kHz: The 1 kHz control is the presence control and can be used very effectively to emphasize, or de-emphasize vocalists.

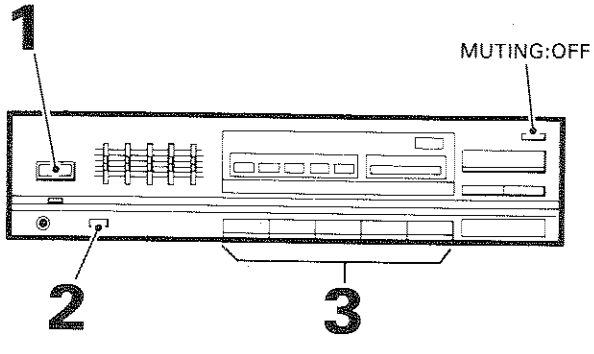
3.3 kHz: The 3.3 kHz control will add brilliance and clarity to brass instruments and violins.

10 kHz: The 10 kHz control can be used to make up for missing high frequencies absorbed by the environment and to add a natural crispness to music.



PRELIMINARY OPERATIONS

- PERFORM THE FOLLOWING PROCEDURES BEFORE STARTING ANY OF THE OPERATIONS.



1. Press the POWER switch to ON.

- The STANDBY/SLEEP indicator will go out.

2. Select the SPEAKERS switch.

3. Select the FUNCTION switches before operating any of the equipment.

- To listen to equipment connected to the VIDEO/AUX jacks: [VIDEO/AUX]
- To listen to a cassette tape: [TAPE]
- To listen to an FM or AM broadcast: [TUNER]
- To listen to a record: [PHONO]
- To listen to a compact disc: [CD]

When a function key is pressed, the corresponding indicator lights.

BASIC OPERATIONS

RECORD PLAY

Manual play (PL-210Z, PL-310Z)

1. Perform the preliminary operations.
2. Place the record on the platter mat.
3. Remove the stylus cover and release the tonearm from the arm rest.
4. Set the SPEED switch.
5. Move the ARM ELEVATION switch to the UP position.
6. Move the tonearm by hand across the record. At this stage, the platter starts to rotate.
7. Move the ARM ELEVATION switch to the DOWN position.
8. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
9. To stop the player, press the STOP (or PLAY/STOP: PL-310Z) switch.

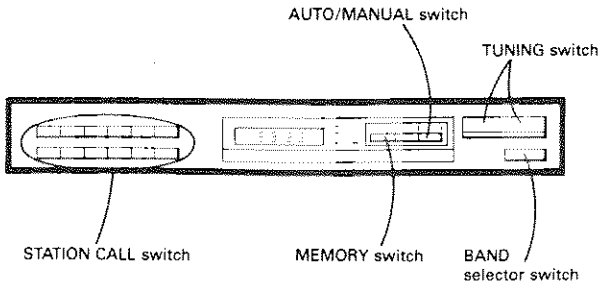
Auto play (PL-310Z only)

1. Perform the preliminary operations.
2. Place the record on the platter mat.
3. Remove the stylus cover and release the tonearm from the arm rest.
4. Set the SPEED and SIZE switches.
5. Move the ARM-ELEVATION switch to the DOWN position.
6. Push the PLAY/STOP switch to start record play.
7. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
8. To stop the player, press the PLAY/STOP switch.

NOTE:

- *When play is completed, the tonearm will return automatically to the arm rest.*
- *When playing 45 rpm records with large center holes, place the EP adaptor onto the platter spindle.*

LISTENING TO THE BROADCASTS



Auto tuning

The electronic tuning circuit inside the cassette deck receiver will automatically search for the station.

1. Perform the preliminary operations on page 12.
2. Select the desired broadcasting band using the BAND selector switch.
3. Press the AUTO/MANUAL switch to establish the auto tuning mode (the AUTO TUNING indicator will light).
4. Press the "+" or "−" side TUNING switch for higher or lower frequency.
   The frequency will change rapidly during scanning. The auto tuning will stop automatically when the station is located and the TUNED indicator will light up.

NOTE:
When the auto tuning is in use, reception may not be possible over long distances or when signals are weak. At these times manual tuning is recommended.

5. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.

Manual tuning

1. Perform the preliminary operations on page 12.
2. Select your desired broadcasting band using the BAND selector switch.
3. Press the AUTO/MANUAL switch to establish the manual tuning mode (the AUTO TUNING indicator goes off).
4. Press the TUNING switch to locate the frequency of your desired station.
   For step-by-step searching, press the TUNING switch once and release it immediately. For continuous rapid scanning keep the TUNING switch pressed. The TUNED indicator will light up when the station is tuned in best.

NOTE:
The TUNED indicator will not function for broadcasts received over long distances or when signals are weak.

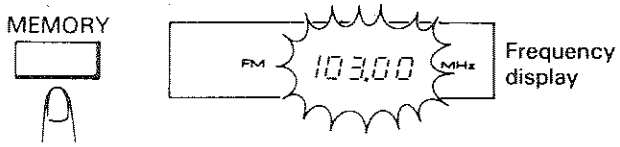
5. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.

PRESETTING STATIONS

Presetting

From 1 to 24 FM/AM stations can be preset at random. Press the STATION CALL switch once for 1 — 12 (Mode 1) and twice for 13 — 24 (Mode 2).

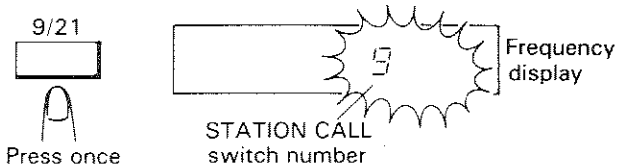
1. **Tune in desired station.**
   - See the auto tuning section for information on reception using auto tuning.
   - See the manual tuning section for information on reception using manual tuning.
2. **Press the MEMORY switch.**
   - The display will flash (about 3 seconds).



3. **Press the STATION CALL switch.**
   - While the display is flashing, press the switch corresponding to the station which you wish to preset or re-preset.

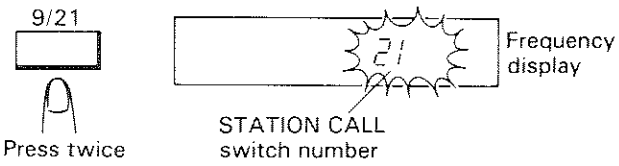
When presetting a station to Mode 1 (e.g. presetting a station to No. 9):

By pressing the STATION CALL switch once, the station will be preset to Mode 1.



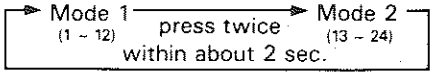
When presetting a station Mode 2 (e.g. presetting a station to No. 21):

Mode 2 stations are preset by pressing the STATION CALL switch twice within about 2 seconds.



- After you press the STATION CALL switch, the display will flash for about 2 seconds, then the station will be memorized. If you press another switch (except the FM MONO and AUTO/MANUAL switch) while the display is flashing, the station will not be memorized.

Pressing the STATION CALL switch twice within about 2 seconds switches alternately between Mode 1 and Mode 2.



RECEPTION USING PRESET TUNING

1. Perform the preliminary operations on page 12.
2. Press the STATION CALL switch into which the desired station has been memorized.
   - To listen to a Mode 1 broadcast, press the switch once, and to listen to a Mode 2 broadcast, press it twice.

   In this way, simple and accurate reception of any desired station is possible.

NOTE:
- *The contents of the STATION CALL switches will be preserved for several days, even if the power cord is unplugged.*
- *If a preset station has been erased, re-preset it.*

Last Station Memory

- When the POWER switch is pressed to turn power on, the last station received before the power was previously turned STANDBY mode will be received again.
- When power is ON, if the BAND selector switch is pressed, the last station received before the BAND selector switch was previously pressed will be received again.

TAPE PLAYBACK

Single Playback (a function of both Decks I and II)

1. Perform the preliminary operations on page 12.
2. Press the STOP/EJECT switch and load a pre-recorded cassette tape, then close the cassette door.
3. Select the DOLBY NR switch.
4. Press the PLAY (▶) switch.
   - Press the PLAY (▶) switch of the deck into which the cassette tape is loaded.
5. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
6. To stop playback, press the STOP/EJECT switch.

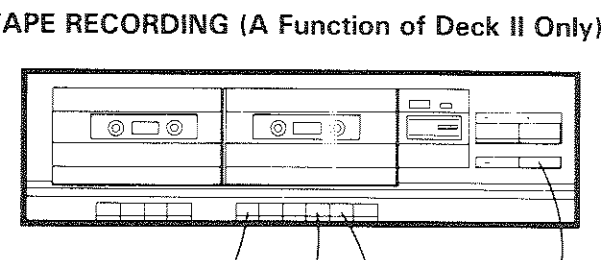
Relay playback (Continuous playback Deck I → Deck II, or Deck II → Deck I)

- A deck will enter the standby mode if its PLAY switch is pressed while the other deck is in the play mode. When the deck presently playing is stopped, the deck in the standby mode will automatically enter the play mode for relay play.
- While the second tape is playing, a new tape can be replaced in the first deck in order to perform continuous playback of different tapes. This is a convenient feature for party background music, etc.

1. Perform the preliminary operations on page 12.
2. Load pre-recorded cassette tapes into both Deck I and DECK II. (Press the STOP/EJECT switch and load the cassettes.) Close the cassette doors.
3. Select the DOLBY NR switch.
4. Press the PLAY (▶) switch for the deck you wish to begin playing first, then press the PLAY (▶) switch for the other deck.
   - When the tape which is playing back reaches the end and automatically stops, the other deck automatically starts playback.
5. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
6. To stop playback, press the STOP/EJECT switches.

NOTES:
- *Pressing the remote control PAUSE key during relay playback and pressing the STOP/EJECT switch on one deck thereafter causes the other deck to start playback.*
- *Pressing the remote control PAUSE key while one deck is playing back and pressing the PLAY switch on the other deck thereafter cancels the pause, causing the former deck in the pause mode to resume playback.*

TAPE RECORDING (A Function of Deck II Only)



1. Perform the preliminary operations on page 12.
   - Select the recording source with the FUNCTION switch.
2. Press the STOP/EJECT switch and load the cassette tape to be used for recording into Deck II. Close the cassette door.
3. Select the DOLBY NR switch.
4. Starts playback of the source being recorded.
   - When recording the sound from Deck I on Deck II (tape dubbing), start playback of Deck I after loading the cassette tape.
5. Hold down the REC (●) switch first and then press the PLAY (▶) switch.
   - The REC indicator will light.
   - Tape recording is unaffected by the VOLUME and GRAPHIC EQUALIZER setting.

NOTE:
- *Beat may occur and be included in recordings when recording AM broadcasts. In such cases, set the BEAT CUT switch on the rear panel to the side where beat is less.*
- *Use remote control pause only for Deck II during tape dubbing. The Deck II pause will not be released even if Deck I is played back in this status.*

6. To stop recording, press the STOP/EJECT switch.

Erasing the tape (function of Deck II only)

When recording on a previously recorded tape, the previously recorded sounds will be erased and new recording entered on the tape. To erase a previously recorded tape without recording anew, perform the following operations.

1. Load the cassette tape into Deck II.
2. Set Deck I to the stop mode.
3. Use the FUNCTION switch to set to TAPE.
4. Hold down the REC (●) switch first and then press the PLAY (►) switch to start erasing.
   - Press the STOP/EJECT switch to stop erasing at any time.

AUTO-STOP MECHANISM (The Function of both Decks I and II)

When the tape is fully wound onto right reel during recording or playback, the auto-stop mechanism is activated without the STOP/EJECT switch having to be pressed, and the tape will automatically stop.

TAPE COPYING

Tape copying is accomplished by playing back the original on Deck I and recording on Deck II. (Note that the reverse is not possible.)
If a tape recorded using Dolby NR is copied, the copy as well will have the same noise-reduction characteristics. Copies of tapes originally recorded without noise reduction will have no noise reduction effects.

- Tape copying with added graphic equalizer effects is not possible.

NORMAL-SPEED COPYING

1. Perform the preliminary operations on page 12.
2. Press the STOP/EJECT switch; then load the original cassette tape into Deck I and the cassette tape to be used for recording into Deck II. Close the cassette doors.

(3.Use the FUNCTION switch to set to TAPE.)

   - Tape copying is possible regardless of the FUNCTION switch setting. However, the sound from the speakers will be that of the program source selected.

4. Press the SYNCHRO switch of the COPY MODE switches.
   - The SYNCHRO indicator will light.
5. Hold down the REC (●) switch and then press the PLAY (►) switch of Deck II.
   - The REC indicator will flash.
   - The tape will remain stopped.

> *NOTE:*
> *Make sure that the SYNCHRO indicator is lit.*
> *If not lit, the tape cannot be copied; so press the STOP/EJECT switch, return to item 4 and repeat the operation.*

6. Press the PLAY (►) switch of Deck I.
   - Deck I will start playing back and Deck II will start recording.
   - The SYNCHRO indicator will flash (it will continue to flash when PAUSE is used with the remote control) and the REC indicator will light.
   - Tape copying is unaffected by the volume and graphic equalizer settings.
   - When setting the FUNCTION switch to TAPE and listening to playback from Deck I, set the volume and graphic equalizer controls.
7. To stop while making a copy, press the STOP/EJECT switches on both decks.

HIGH-SPEED COPYING

1. Perform the preliminary operations on page 12.
2. Press the STOP/EJECT switch; then load the original cassette tape into Deck I and the cassette tape to be used for recording into Deck II. Close the casette doors.
3. Press the SYNCHRO switch of the COPY MODE switches.
   - The SYNCHRO indicator will light.
   - Tape copying is possible regardless of the FUNCTION switch setting; however, the sound from the speakers will be that of the selected program source.
4. Press the HIGH SPEED switch of the COPY MODE switches.
   - The HIGH SPEED indicator will light.
5. Hold down the REC (●) switch and then press the PLAY (►) switch of Deck II.
   - The REC indicator will flash.
   - The tape will remain stopped.

> *NOTE:*
> *Make sure that both the SYNCHRO and HIGH SPEED indicators are lit. High-speed copying is not possible unless both are lit, so press the STOP/EJECT switch, return to item 3 and repeat the operation.*

6. Press the PLAY (►) switch of Deck I.
   - The REC indicator will light.
   - The SYNCHRO and HIGH SPEED indicators will flash. It will continue to flash when PAUSE is used with the remote control.
7. To stop while making a copy, press the STOP/EJECT switches on both decks.

> *NOTE:*
> - *When using in the same room as a television set, position far enough away from the set to avoid interference, or turn off power to the television set.*
> - *Beat may occur and be included in recordings when copying while receiving AM broadcasts. In such cases, set the BEAT CUT switch on the rear panel to the side where beat is less. There is no need to operate the BEAT CUT switch except for AM broadcasts.*

When Deck I is stopped while copying, restart from step 6.
When Deck II is stopped, restart from the beginning.

> *NOTE:*
> *Pressing PAUSE from the remote control, operating the Deck I switches (except PLAY switch) cancels the Deck II pause mode and enters the SYNCHRO REC STANDBY mode. Playing Deck I in this status restarts SYNCHRO REC.*

RECORDING AND PLAYBACK USING AN OPTIONAL AUDIO TIMER

UNATTENDED RECORDING (Deck II only)

1. Set the POWER switch to the standby position and connect the power cord to the outlet on the audio timer.
2. Set the POWER switch to ON.
3. Load a tape for recording in Deck II.
4. Select the DOLBY NR switch.
5. Press the TUNER FUNCTION switch and tune in the station to be recorded.
6. Turn down the volume control to minimum position.
7. Set the audio timer (optional) so that the power comes on at the desired time. (Power to the components should be off at this point).
8. Hold down the REC (●) switch and then press the PLAY (▷) switch of Deck II.
9. Power will be turned on automatically at the preset time, and recording will start.

WAKE-UP PLAYBACK (Deck I and II)

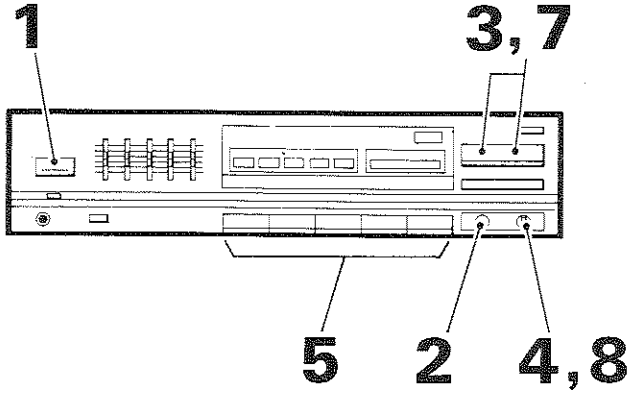
1. Set the POWER switch to the stand-by position and connect the power cord to the outlet on the audio timer.
2. Set the POWER switch to ON.
3. Select the DOLBY NR switch.
4. Load the tape which is to be played back.
5. Adjust the volume control to produce the level of volume required when timer playback starts.
6. Set the time on the audio timer (optional) so that the power comes on at the desired time. (Power to the cassette deck receiver should be off at this point.)
7. Press the PLAY (▷) switch.
   At the preset time, the power is switched on and the playback starts automatically.

   Depress both PLAY (▷) switches (Deck I and Deck II). At the preset time, the POWER is switched on and the relay playback starts automatically.
   Operations will vary according to the audio timer used. For details, see the operating instructions supplied with the audio timer (optional).

MIC MIXING

MIXING KNOW-HOW

Mixing involves combining the signals from two input sources (a microphone and a tape, for example)



SINGING ALONG WITH A PROGRAM SOURCE

Operate after setting the MIXING LEVEL control to minimum.

1. Perform the preliminary operations on page 12.
2. Plug a microphone into the MIC jack.
3. Adjust the volume to a suitable level.
4. Set the MIXING LEVEL control to the center position.
   - If howling occurs (a high-pitched sound from the speakers), take the following steps.
     (1) Move the microphone away from the speakers.
     (2) Lower the volume.
5. Select the desired program source using the FUNCTION switches.
6. Start playback of the program source.
7. Adjust the overall volume.
8. Using the MIXING LEVEL control, adjust the sound balance between the microphone and the program source.
9. Sing along with the program using the microphone.

NOTE:
- *Recording of mixed sound is not possible.*
- *When not using the MIXING function, be sure to set the MIXING LEVEL control to SOURCE and remove the microphone plug from the MIC jack.*

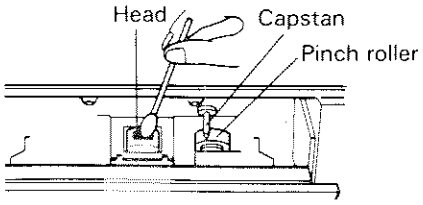
MAINTENANCE

CLEANING THE HEAD SECTION

The heads, capstan and pinch roller are parts which are liable to get dirty quite easily. In particular, if the heads are dirty, the high frequency components of the sound will not be reproduced and the stereo balance will be impaired, resulting in a deterioration of sound quality. It is therefore recommended that the head section be cleaned regularly.

1. Press the STOP/EJECT switch to open the cassette door.
2. Dip a cleaning swab into the cleaning fluid and use it to wipe the heads, capstan, and pinch roller.

NOTE:
- *Clean the head as shown in the below drawing.*



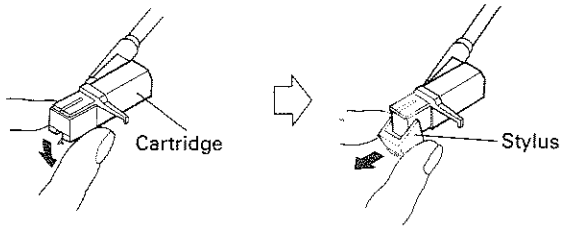
DEMAGNETIZING THE HEAD

The head becomes magnetized when you use the tape deck for prolonged periods of time. This results in noise being generated and the treble dropping off during recording and playback. The head should therefore be demagnetized regularly with a head demagnetizer (sold separately). For further details, refer to the operating instructions accompanying your head demagnetizer.

NOTE:
- *Do not hold screwdrivers, metal objects, or magnets close to the heads.*
- *When demagnetizing the heads, be sure the unit's POWER switch is in the standby position.*

REPLACING THE STYLUS

1. Remove the stylus gently.



2. Attach the new stylus to the cartridge and replace the screw.

NOTE:
- *The service life of the stylus on the supplied cartridge ranges from 800 to 1,000 hours.*
- *Using a worn or damaged stylus can damage your records and distort the sound reproduction. Remember to replace the stylus at the earliest possible date.*
- *Always use the PIONEER "PN-240" as a replacement stylus.*
- *Always ask for a genuine PIONEER replacement stylus.*

PRECAUTION

If the turntable is mounted directly on or against a speaker, the vibration from the speaker will be transported to the tonearm's cartridge, thus causing feedback howling. Be sure that speakers are mounted sufficiently separated from the turntable.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Amplifier section

Symptom	Cause	Remedy
No sound from speakers.	• Is volume level turned down? • Is Muting on? • Is the SPEAKERS switch in the wrong position? • Are headphones connected to the PHONES jack?	• Increase volume level. • Press the Muting switch to cancel muting. • Set it to the correct position. • Disconnect the headphones.

Cassette tape deck section

Symptom	Cause	Remedy
Tape deck will not work.	• Is deck in pause mode? • Is tape loaded correctly?	• Press PAUSE switch to release pause mode. • Load correctly.
No sound from tape deck.	• Is TAPE FUNCTION switch selected? • Is a blank tape loaded? • Are heads clean?	• Press TAPE FUNCTION switch. • Load a pre-recorded tape. • Clean heads.
Recording not possible.	• Is tape loaded in Deck I? • Are heads clean? • Is a tab on the cassette tape removed?	• Load tape in Deck II for recording. • Clean heads. • Use a cassette tape with tabs, or place a piece of adhesive tape on the back edge (see page 11).
Copying not possible	• Is a tab on the cassette tape removed?	• Use a cassette tape with tabs, or place a piece of adhesive tape on the back edge (see page 11).
High frequency sounds not reproduced.	• Is a non-Dolby NR tape being played back with the Dolby NR system on?	• Turn off the Dolby NR system.
High frequencies over-emphasized.	• Is a Dolby NR tape being played back with the Dolby NR system off?	• Turn on the Dolby NR system.
Noise picked up during recording of tape, record, radio, etc.	• Is power to TV set turned on? • Is unit located too close to TV set? • Did you try operating the BEAT CUT switch (for AM broadcasts only)?	• Turn off TV set. • Move unit at least 30 cm from TV set. • Set the BEAT CUT switch on the rear panel to the side where noise is less.

Tuner section

Symptom	Cause	Remedy
No sound.	• Is TUNER FUNCTION switch selected?	• Press TUNER FUNCTION switch.
AM reception not possible.	• Is loop antenna connected? • Is BAND selector switch set to AM? • Is station tuned in properly?	• Connect loop antenna. • Press the BAND selector switch for AM. • Tune in station properly.
FM reception not possible.	• Is antenna connected? • Is BAND selector switch set to FM?	• Connect antenna, following instructions on page 4, 5. • Press the BAND selector switch for FM.
Large amount of noise	• Are radio waves weak, causing antenna input to be insufficient?	• Switch OFF the CD player.

Turntable

Symptom	Cause	Remedy
Turntable does not work.	• Is drive belt properly attached?	• Attach belt correctly.
No sound.	• Is PHONO FUNCTION switch selected?	• Press PHONO FUNCTION switch.
Static, scratching noise produced.	• Is record surface dirty? • Is record warped or scratched?	• Clean record. • Replace record.

Remote Control Unit

Symptom	Cause	Remedy
Remote control operation is not possible.	• Battery is not installed in remote control unit. • Battery is dead. • Remote control cord is not connected.	• Insert battery. • Insert a new battery. • Correctly connect remote control cord.

SPECIFICATIONS

Amplifier Section

Continuous Average Power Output is 36 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09% total harmonic distortion.**

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule Power Output Claims for Amplifier.*

** *Measured by Audio Spectrum Analyzer.*

Continuous Power Output
- Music power (both channel driven)
  ..... 100 W + 100 W (1kHz, T.H.D. 10%, 8Ω)
- Peak music power L+R channels ..... 400 W

Frequency Response
- PHONO MM ..... 20 Hz to 20,000 Hz ±2 dB
- CD, VIDEO/AUX ..... 20 Hz to 70,000 Hz ± 2 dB

Signal-to-Noise Ratio (IHF, short circuited, A network)
- PHONO MM ..... 65 dB
- CD, VIDEO/AUX ..... 90 dB

Graphic Equalizer frequency band
..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±10 dB

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ... MONO: 16 dBf, IHF (1.7 μV/75 ohms)
Signal-to-Noise Ratio (85 dBf, Input) ..... Mono: 70 dB
Stereo: 67 dB
Antenna Input ..... 300 Ω balanced
75 Ω unbalanced

AM Tuner Section

Frequency range
- When 10 kHz step ..... 530 kHz to 1,700 kHz
- When 9 kHz step ..... 531 kHz to 1,602 kHz

Antenna ..... Loop Antenna

Tape Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head ×1
Playback head × 1
Erasing head × 1
Motor ..... DC servo 2 speed motor × 2
Wow and Flutter ..... No more than 0.3% (WRMS)
Fast Winding Time ..... Approximately 105 seconds (C-60 tape)

Frequency Response
- −20 dB recording:
  - Normal tape ..... 35 Hz to 14,000 Hz ±6 dB
  - CrO_2 ..... 35 Hz to 15,000 Hz ±6 dB

Signal-to-Noise Ratio
- Dolby NR OFF ..... 50 dB

Noise Reduction Effect
- Dolby B type NR ON ..... More than 10 dB (at 5 kHz)

Miscellaneous

Power requirements
..... AC 110 V/120-127 V/220 V/240 V (switchable), 50/60 Hz
Power Consumption ..... 310 W
Dimensions ..... 420 (W) × 280 (H) × 320 (D) mm
16-9/16 (W) × 11 (H) × 12-5/8 (D) in
Weight (without package) 8.7kg (19lb 3oz)

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Operating Instructions 1
Remote control unit 1
Dry cell batteries [AAA (RO3)] 2

Turntable [PL-210Z, PL-310Z]

Motor, Platter

Motor Type ..... DC servo motor
Drive Method ..... belt drive
Speed ..... 33-1/3, 45 RPM
Speed Variation ..... 0.07% WRMS (JIS) ±0.10% WTD Peak (DIN)
Signal-to-Noise Ratio ..... 68 dB (DIN-B)
Platter ..... 295 mm dia., aluminum die-cast

Tonearm

Type ..... static-balance type, straight tonearm

Installed Cartridge

Type ..... MM type
Replacement stylus PN-240
Stylus ..... 0.6 mil diamond
Output voltage 2.5 mV(1 kHz, 5 cm/s, Lat. peak)
Tracking Force ..... 1.5 — 2.5 g (optimum 2.0 g)
Frequency Response ..... 10 Hz to 30,000 Hz
Load Resistance ..... 47 kΩ
Cartridge Weight ..... 5 g

Others

Dimensions
PL-210Z ..... 420 (W) × 95 (H) × 356 (D) mm
16-9/16 (W) × 3-3/4 (H) × 14 (D) in
PL-310Z ..... 420 (W) × 95 (H) × 356 (D) mm
16-9/16 (W) × 3-3/4 (H) × 14 (D) in
Weight
PL-210Z ..... 2.7 kg (5 lb 15 oz)
PL-310Z ..... 2.7 kg (5 lb 15 oz)

Accessories

EP Adaptor 1

NOTE:
Specifications and the design subject to possible modifications without notice due to improvements.

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<88F00YY6C02>
Printed in Japan <ARB1145-A>